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THE AMERICAN JOURNAL
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ORIGINAL ARTICLES.

THE DETROIT MEETING.

By W. F. Hardy, M.D.,
ST. LOUIS, MO.

The 1916 meeting of the American Medical Association was in many respects one of the most successful and interesting ever held by that organization. The local profession of Detroit outdid themselves in the endeavor to make the occasion a memorable one, both from a scientific and social standpoint. Detroit as it is, blessed by natural advantages and possessing that enthusiasm characteristic of hustling, bustling, virile and growing communities, makes an ideal city for summer conventions. The medical profession of Detroit spared no effort or expense, particularly the latter, to make each visiting member welcome and produce a lasting pleasant memory of his or her visit to the city of Cadillac. The social features were particularly elaborate and numerous, every effort being made to entertain the wives and families of the members. That some imposed upon and violated the hospitality of their Detroit confrères cannot be denied. For those we have regrets and offer apologies. The instances were few in number. It is to be hoped that no ophthalmologist so far forgot himself as to deviate from the accepted practices of gentlemen, like unto those of certain others, the actions of whom came to the attention of the writer.

From all accounts the different section meetings were quite as successful as the Section on Ophthalmology. What concerns us mostly was our own section meeting. A hasty look through the pre-sessional number did not give rise to a feeling of lively interest in the program, which but goes to prove the written work

expressed in cold type loses much of its vim and magnetism, which is only furnished by the personality and enthusiasm of the author. Again, the discussion often proves the most valuable part of a paper and this was true in a number of instances.

The morning of the third day was given over to an executive session, at which time officers were elected, committees reported and the award of the Knapp Medal made. The latter honor fell to Geo. S. Derby, of Boston. Wm. Zentmayer was elected chairman; Cassius D. Westcott, vice-chairman; Geo. S. Derby secretary, for a period of three years.

Dr. Walter Parker gave his chairman's address, choosing as his subject the Pathogenesis of Choked Disc, with the results of his experiments on animals in which he artificially produced papillœdema. The literature dealing with the genesis of choked disc was reviewed. The substance of Parker's contention appears to be that the state of the intraocular tension determines the degree of swelling of the disc and also the eye to be first affected. The eye with the lower tension showing the earlier and greater swelling. The writer did not note any reference being made to the claims of Thompson Henderson, but it may be that he missed it. Henderson's claims were virtually the same as Parker's; however, he had no experimental evidence to substantiate his contentions, whereas Parker trephined one eye in dogs, raised intracranial tension by means of sponge tents and thereby produced choked disc. It is extremely difficult for the writer to accept Parker's deductions as final; yet his experimental work may be the opening wedge into a better and fuller understanding of this much mooted question.

The scientific program was opened by Mark J. Schoenberg, of New York, with a paper entitled, "Intracranial Treatment of Syphilitic and Parasyphilitic Optic Nerve Affections." The paper was so exhaustive and touched upon so many points that the author could not adequately present it in the limited time at his disposal. He desired to stimulate interest in the subject and modestly refrained from making any sweeping claims and assertions. He took exception to any attempt to designate the procedure as Schoenberg's method. His specimens of dogs' brains, optic nerves and spinal cords were vivid illustrations of the efficacy of intracranial vital staining and the inefficacy of intraspinal injections of staining substances. Substances used were trypan blue, methylene blue and a suspension of lamp black. When injected into the spinal canal little or no staining of

the optic nerves occurred, whereas when the intracranial method was used the optic nerves took on a deep stain. Practically as a therapeutic procedure we will necessarily have to proceed cautiously. It appears hazardous and somewhat heroic to trephine a patient's skull and inject anti-spirochetal remedies into his ventricles. The subject is young and much work need yet be done before the suggestion is put to a practical therapeutic test. Dr. Schoenberg is to be commended for his work, originality and courage of his convictions.

Dr. Westcott presented a clinical report of "A Case of Granuloma Pyogenicum Affecting the Eyelid." The point emphasized was the great importance and difficulty in making a differential diagnosis. The section was extremely fortunate in having Dr. Wile present to discuss the paper, as he, in 1910, published an elaborate article on granuloma pyogenicum with complete bibliography.

Geo. Slocum's paper dealt with "A Study of Ophthalmoscopic Changes in Nephritis." This subject has been studied from many angles by various writers. Slocum has tabulated his observations and findings. One of the most striking features of his study was the high percentage of disc swellings found. A rather curious feature of his classifications of nephritis was the division of the chronic affections into chronic interstitial and chronic nephritis. Just when, where and how the distinction and differentiation is clinically made was not clearly presented.

Dr. Wm. L. Clark's contribution, "The Uses of the Desiccation Method in Ophthalmology," had to do with the cure of basal cell epitheliomata of the lids and canthi by means of special apparatus and a technique brought to a high degree of proficiency by Dr. Clark.

Dr. Gradle demonstrated an instrument of his own devising for the clinical measurement of dark adaptation. Dr. Lucien Howe demonstrated his ergograph. The tracings made on a revolving drum furnish a graphic illustration of the fatigue of accommodation. Dr. Bissell showed his apparatus for better field taking, made possible by a double fixation. Dr. E. C. Ellett gave a clinical report of "A Primary Intradural Tumor of the Optic Nerve". Removal with preservation of the eyeball.

Dr. Gifford's paper on "Homatropine Glaucoma" brought forth the most prolific discussion. Most everyone wished to "get in on the discussion." The cycloplegists and the antis had their inning. Debate on the question of the strength of solution used was not

allowed. While post mortems and confessions have value, yet this rattling of the skeleton provides greedily sought material and ammunition for the optometrist fraternity. The title of Dr. Gifford's paper will undoubtedly be revised. Ophthalmologists know, but the laity does not know, that an individual developing glaucoma after homatropine must have been predisposed anatomically or otherwise to the disease. The incidence of glaucoma after homatropine is extremely low and is no argument against the use of this valuable drug.

Dr. Zentmayer's paper dealt with "Traumatic Pulsating Exophthalmus", with a case report and a review of the literature in reference to the surgical measures directed to its cure. A number of papers were devoted to the ocular muscles, one by Will Walter on "The Ætiology of Nonparalytic Ocular Imbalance." One by Wendell Reber on "Heterophoria in Children." Another by Frank C. Todd on "Strabismus Produced by Operations for Strabismus," and finally Roderic O'Connor's "A New Shortening Technic", with a report of forty-two operations.

Dr. Reber's views are well known. He has contributed much to the subject of muscular anomalies and imbalance. His work in regard to the heterophorias of children is but an extension of his energy and activities. Some amusing discussion was brought out and the repartee between Drs. Reber and Savage did much to break the monotony of the long sessions. Dr. Todd is naturally and justly partial to his tucking operation. Opinion has pretty well settled against the old free and uncontrolled tenotomy. Yet no doubt it is still frequently done. A shortening by advancement or tucking plus a lengthening of the opponent by the Todd-Harmon method places at our disposal a dependable procedure. In a free tenotomy one never knows just where and how the muscle will become reattached.

O'Connor's operation appears complicated and difficult of execution. This its originator denies, but Posey, who has done a number (17), stated that he who thinks it is easy will be disillusioned on attempting it. The operation has many things to recommend it, but the difficult technic will probably militate against its being widely adopted.

Dr. W. B. Lancaster discussed the preparation of the patient for operation. While presenting nothing new his article is full of good sound sense. The importance of a complete history, mental preparation, examination of the nose and mouth, blood pressure, condition of the lacrimal sac, conjunctiva, etc., were

taken up in detail. The management and prevention of squeezing was discussed. Good judgment appeared to be the keynote of Lancaster's paper. A perusal of the paper should prove of value to those operators long on zeal and short on judgment.

Dr. Shahan's article, "Effects of Heat on the Eye," was carefully prepared and well presented. That it was of negative value detracts not a whit from its importance. At times to know what not to do is as valuable as to know what to do. That heat less than 135 degrees F. has no effect on serpiginous ulcers was pretty definitely demonstrated by Dr. Shahan.

Marcus Feingold added to the somewhat scant literature of progressive macular degeneration by a detailed record of this affection in three members of a family. One point of interest was that the three patients were children of Russian Jews, who were first cousins. The inference was that the macular changes were the result of some congenital weakness of the macular region and not due to acquired disease. It is considered to be a progressive disease.

James Bordley added a supplementary report to his previous communication on "Malignant Uveitis Treated with Thyroid Extract." He does not claim that it is a panacea for all types of malignant uveitis or for any special type. In view of the recent work done on the iodine content of the thyroid there may be much in the clinical observation of Bordley. Thyroid may in some as yet unaccountable way raise the resistance of the body in general and the tissues of the eye in particular. Malignant uveitis is such a bewildering affection that we reach out with avidity and use any remedy, empirically, that offers any hope of success.

Casey Wood diverted the attention of the section from the more serious subjects and offered an hour of enjoyable entertainment in his talk on the fundi of birds, illustrated with lantern slides. To those who have given no attention to comparative ophthalmology the appearance and function of the pecten was an illuminating disclosure. Most everything in animate nature, except the propagation of the species, has been subordinated to the function of the securing of food. The fundi of birds demonstrates this point fully.

Arnold Knapp reported a case of retinal detachment in hydrophthalmia going on to phthisis bulbi. It was deemed worthy of report because this outcome is not mentioned in the text books. Axenfeld was quoted as having reported a similar case.

"Discission of the Crystalline" was the subject of Dr. Edward Jackson's paper. A number of case histories were given, illustrating the points he desired to make. The text book accounts of discission Jackson found unsatisfactory. A number of the case histories were of adults, one 41 years old. It is considered a proper procedure in monolateral cataract up to middle life. A short incision in the capsule should be made. Severe reactions are caused by large masses of lens matter in the anterior chamber. Puncture through the vascular limbus affords the greatest safety from infection.

Dr. Wm. E. Bruner discussed "Preliminary Capsulotomy in Immature Cataract," with six case history reports. He prefers a preliminary iridectomy in unripe cataract but doubts if it adds to the success of the procedure. This subjects the patient to an additional operation. A twenty-four hour interval is allowed to elapse after the capsulotomy. Should excessive lens swelling occur extraction could be done in a shorter time, though he has not found this necessary. A drawback is that the use of capsule forceps is precluded, reliance must be placed on the preliminary capsulotomy. With this latter only the anterior lens cortex is reached, which is another drawback. For the removal of soft cortex Bruner relies on irrigation of the anterior chamber.

Several comments may be made on Bruner's paper. One, somewhat foreign to the title, is that of preliminary iridectomy. If this procedure is carried out in one-eyed subjects and where extreme care is exercised, why should it not be used in all cataract cases? It is an old subject but still unsettled. That it subjects the patient to two operations is no argument against it. The question of whether a given procedure suits a patient's likes and convenience or is conducive to safety of vision is not debatable. The point to be decided is what is best and safest. The rest is mere detail. Despite Bruner's statement to the contrary, preliminary iridectomy may have had a beneficent influence in bringing about his good visual results. With a wait of 24 hours after capsulotomy the patient should be watched closely in the interval; for even if a rise of tension does not occur, a mild iritis or cyclitis does often do so in 24 hours, and we are forced to operate on a tender globe incapable of deep anæsthesia. This invites unruliness in the patient and accidents are apt to occur. The 24 hour interval works best, no doubt, where a small or insufficient cut is made in the capsule, but good opacification of the clear cortex is not obtained. Therefore much reliance must be placed

on irrigation, and if this fails considerable cortex is left behind, and clearing of the pupil is delayed or the operation is a failure. The orginal procedure of Homer Smith is no doubt right in principle, if we are to use this operation for unripe cataract, viz.: a free and deep cut in the capsule so that the flaps cannot unite, providing entrance of the aqueous with rapid clouding of the clear cortex and extraction in six hours before tension rises or the globe becomes tender. Many an operation and operator is discredited because of the desire to add to or subtract from the original. Give the original a fair and extended trial and if not satisfactory modifications may be added.

LOSS OF SIGHT FROM RETROBULBAR NEURITIS DUE TO ACCESSORY SINUS DISEASE, WITH REPORT OF TWO CASES.

White (*Boston Med. and Surg. Jour.*, June 1, 1916) reviews the anatomy of the orbit with regard to its relation to the accessory sinuses. In most cases the pathological findings make the diagnosis easy. yet in an appreciable number of others little or nothing can be found in the nose. X-ray examinations in doubtful cases are disappearing. However, they give a good general idea of the anatomical structure of the sinuses. The first loss of sight is for colors, later entire vision may be lost. Enlargement of the blind spot is an early sign. A central scotoma is the most definite and reliable sign. Two case reports are given. The interesting points in the second case seem to be as follows. (1) Only one sinus was affected while both eyes showed the neuritis. (2) The findings on examination of the sinus were slight compared with the seriousness of the inflammatory process. (3) The question as to whether the shallowness (of the left sphenoidal cell) was congenital or pathological. (4) The rapidity with which the vision returned.

Emphasis is laid on the necessity of prompt operative interference and to substantiate this, quotations are given from Harmon Smith and Onodi.

ON DISLOCATION AND REPLACING OF THE EYEBALL.*

By Dr. E. Redslob,
STRASSBURG.

(From Prof. Dr. E. Hertel's Clinic.)

The papers on eye injuries naturally at this time bring almost altogether communications on war injuries. I may be pardoned, if in the following I want to describe an eye injury which has no connection with the war but with the business of a farmer, on account of the rarity of the case and its inherent interest.

Here is the history: On April 29th, 1915, the cattle driver, L. J., 48 years old, presented himself at the University Clinic, stating that his right eye had been injured in the morning by a cow. When he tied her she struck him fairly hard with the horn against the eye. He had bled strongly from the nose and the eye had become swollen immediately. In spite of the severe pain he did not faint, but walked three-fourths of a mile to a physician, who bandaged him and sent him to the clinic. Before this accident both eyes are said to have been healthy, except the right lower lid, which was everted.

The man was strong and well built, and looked healthy. The lids of the right eye were considerably swollen and suggillated. There was a superficial torn wound about 5 mm. long on the right upper lid in the region of the lacrimal gland. An attempt to separate the greatly swollen lids is but partly successful. Nothing of the eyeball can be seen. There is only a deep hole between the folds of the conjunctiva; the eyeball seems wanting altogether. Patient says that he still perceives some light through the lids. His statements were uncertain; light projection was impossible.

Since a more careful examination of the orbit caused severe pain, the patient was anæsthetized. Under narcosis the lids were held apart as far as possible, but even then nothing but an empty cavity-like wound could be seen covered with chemotic conjunctival folds.

With the palpating finger a tense elastic body was felt just sticking out of the lower orbital wall and was at once recognized as the lost eyeball. After cutting the outer canthus and the introduction of blunt hooks it was seen that in reality the projec-

*Klin. Mtsbl. f. Augenhlk., LV, p. 582.

tion consisted only of sclerotic, which looked out of an oval opening in Highmore's antrum. The remainder of the eyeball was invisible. Only with great difficulty an elevator could be introduced between the sclerotic and the closely applied opening in the orbital wall, and thus the eyeball be levered out of the maxillary antrum.

It was then seen that the cornea was situated down and nasalward, the sclerotic with its æquatorial region, however, forward. The eyeball was brought into its proper position. The conjunctiva was torn off smoothly all around at the limbus. The sclerotic was freely exposed; all the muscles were severed from their places of insertion on the eyeball, there were only a few fibres of m. obliquus inferior remaining. The eye was attached only to the optic nerve, which seemed uninjured. The eyeball was not perforated. Compared with that of the other eye its tension was but slightly lower. The cornea showed striped opacities; the pupil was dilated at maximum and did not respond to light. There was no red reflex from the depth.

By means of conjunctival sutures which included as much as possible of the superior layers of the sclerotic the eyeball was fastened in the correct position. Bandage.

May 1.—Eyelids still greatly suffused with blood. No disturbance in the sensibility of the skin. Cornea dull, no pupillary reaction. No perception of light.

May 2.—More chemosis, eyeball prominent, immovable. Amaurosis (repeatedly examined.) No spontaneous pain, no fever, no pain or pressure on the eyeball. The eyeball cannot be pressed back into the orbit. The cornea still shows striped opacities. No red reflex from the depth.

May 3.—Pain more severe during the night in the region of the right eye, no fever. Lids less swollen, feel softer. No pain on pressure. Cornea without sensation and still diffusely opaque. The pupil is wide and immoveable. Suture removed.

May 5.—Still pains during the night, especially when lying on the back. The skin in the area of the infraorbital nerve to-day is anæsthetic.

May 9.—The pains in the region of the right eye have ceased yesterday. The swelling of the lids is sufficiently reduced that an old ectropium of the lower lid can be noticed. No chemosis. The bulbar conjunctiva is paler, the cornea clearer. The pupil is irregularly dilated and does not react to light. The eyeball is not sensitive on pressure, it diverges considerably.

May 13.—Still pains at times during the night, which disappear after aspirin. The anæsthetic zone of the skin is smaller.

May 17.—The eye diverges, but is no longer prominent. The bulbar conjunctiva is getting paler.

May 19.—The eyeball is moved outwards a trace. The irritation is daily less. The cornea is getting clear except for a not very dense, central macula. The pupil is still almost at maximum dilated and immoveable. On the anterior lens capsule are numerous pigment particles where the iris had been pressed on to it during the injury. There is a red fundus reflex, but no details of the fundus can be seen. The skin is anæsthetic only in a space the size of a 3 mark piece, around the infraorbital nerve exit.

June 4.—The size of the anæsthetic skin zone is continually getting smaller. The eyeball can be moved a trace upward and a little outward. The fundus is better visible. The papilla is yellowish white discolored, the blood vessels are very thin so that the arteries cannot be distinguished from the veins. Below the papilla lies a white focus of oval outline in the area of a blood-vessel. In the region of the macula there is an oval focus covered by a thin veil-like opacity (remnant of a Berlin opacity?). There are some small hæmorrhages below and above this spot. Complete amaurosis.

June 5.—According to his wish the patient is permitted to go home, but asked to present himself at the clinic at regular intervals.

June 19.—The eye is diverging and sunken in (enophthalmus). Movements, although limited, are possible in all directions. No sign of atrophy of the eyeball.

August 31.—Four months after the injury. The exophthalmus is plain. Measured with Hertel's exopthalmometer the difference is about 5 mm. R.=12.5 mm., L.=17.5 mm.). Outward movements of the eyeball are satisfactory, there is motion up and downward, although to a more limited degree; inward motion is almost wanting altogether. The ectropium is unchanged. There is a slight symblepharon downwards. The sensibility of the cornea is normal.

The papilla is perfectly white, its outlines are blurred. The veins are very thin; the arteries as such can no longer be seen and are replaced by finest white lines. No pigment in the macula, but a narrow elongated white focus which runs pretty nearly vertically from above downward. There are no longer any hæmorrhages and the white opacity has wholly disappeared. No-

where are there any abnormal accumulations of pigment either in the choroid or the retina. Amaurosis.

September 28.—Five months after the injury. The eye is pale. The enophthalmus and the motility remain unaltered. The fundus has not changed since the last examination. (Total atrophy of the optic nerve and rupture of the choroid in the region of the macula). The eyeball has retained its normal shape. The intraocular tension is equal in the two eyes. Absolute amaurosis.

The left eye is normal and has full visual acuity.

Reviewing the case in short we had to deal with a dislocation of the right eyeball into the maxillary antrum by a cow horn; the cornea lay downward, the sclerotic forward. When the eyeball was levered out it was seen that the conjunctiva at the limbus as well as the four recti muscles and the superior oblique muscle were torn off. Only a few fibres of the inferior oblique muscle remained in connection with the dislocated eyeball. The optic nerve was not torn. The eyeball presented itself just as we are accustomed to see it during an enucleation immediately before the optic nerve is cut. Although its connections with the orbit were lost to such a large extent, after being fixed by means of a few conjunctivo-scleral sutures, it healed on well and even regained a certain, though limited, motility. In consequence of the stretching of the optic nerve an atrophy of the papilla has resulted which has destroyed the visual function of the eye. Furthermore, a choroidal rupture in the macular region was produced by the contusion.

This then was one of the rare cases of dislocation of the eyeball into Highmore's antrum. Birsch-Hirschfeld designates as dislocation of the eyeball, following Langenbeck, Becker, Beer and Tweedy, that alteration in position in which the eyeball has left the orbit altogether in a lateral direction, and consequently lies in one of the accessory cavities, either the maxillary antrum or the ethmoid cavity. Perthes enlarges the meaning of dislocation still further. He comprises under this head all cases in which the eyeball with a lateral deviation from the axis of the orbit has passed partly or entirely outside of the normal orbital limits, in order to distinguish this from luxation, ex- and enophthalmus, in which the dislocation takes place in the direction of the orbital axis. According to this Perthes differentiates between three degrees of dislocation of the eyeball. In the dislocation of the first degree the pupil of the laterally displaced bulbus is seen when the eye is spontaneously opened. The eye

may, therefore, take part in the act of vision. In dislocation of the second degree the pupil of the eyeball within the orbit is permanently covered by the lower eyelid. In dislocation of the third degree the eyeball is no longer within the orbit.

Our case represents such a dislocation of the third degree of Perthes, that is a dislocation simply. The eyeball has left the orbit through the opening caused by the depression fracture of the floor of the orbit. This happens but very rarely. In 1909 Birsch-Hirschfeld could collect only five cases, and scanning the literature I have not been able to find another case. The oldest of these five cases is an observation made in the 16th century. Its credibility has been often assailed with more or less justice on account of its age and the very queer circumstances accompanying it. It was published by Henricus Smetius a Leda and was communicated to the *Centralblatt fuer Augenheilkunde* by Walz. Here is Birsch-Hirschfeld's citation of the remarkable case:

A farmer's boy, who had lost the right eye in early infancy, fell from a cherry tree and with the left side of the face on a sharp fence rail. This caused a deep torn wound of the eyelids, cheek and left half of the nose and a comminution of the bony wall of the nasal cavity. The left orbit was empty and the physician consulted said the eyeball must have remained adherent to the fence rail. A year later while lying in a field in the sun he noticed that he could distinguish between light and dark; later on he could even recognize different kinds of coin. He saw objects when directing his nose upon them. The eyeball, thought to be lost, had been dislocated into the enlarged left nasal cavity and had become adherent there with vision preserved and the pupil directed toward the nostril.

In our case the injury was due to the impact of a cow's horn. Becker's case was due to the same injury.

A farmer's wife was struck by the cow's horn against the region of the left eye. On examination here, too, in the orbit an empty cavity was found lying in œdematous folds of mucous membrane similar to the funnel-shaped space after enucleation. Under narcosis it was found that the eyeball was rotated in and downward, and the centre of the cornea stood about over the exit of the canalis infraorbitalis. The eye which still counted fingers was removed. The roof of Highmore's antrum, the lamina papyracea and the os lacrimale were fractured. Into the opening thus formed by the trauma probably some of the soft parts were forcibly wedged and thus the eyeball was firmly held in this position.

In Tweedy's case, too, a wild bull produced the injury with a horn. However, the dislocation of the eyeball does not seem to have reached the same degree as in the two previous cases. The eyeball was fixed in the depressed orbital floor and could only with difficulty be removed. The blind eye was enucleated.

In Langenbeck's case a railroad official got between locomotive and tender and the right half of his face was smashed by the step of the suddenly moving locomotive. The lids of the right eye were torn off, a deep wound ran vertically from the inner canthus through the cheek to the upper lip. There was no trace of an eyeball. Only six weeks later, when the swelling of the soft parts had receded, the eyeball was found shoved totally out of the orbit and buried in the antrum of the supramaxillary bone through an opening in the orbital process of the size of a finger. The cornea and the anterior segment of the eyeball rested altogether in the antrum of Highmore. The axis of the globe pointed vertically downward. The eye was uninjured and vision perfectly preserved. The eyeball was returned to its normal position, but two months later a corneal ulcer was formed, and after sloughing of the cornea the eye shrank and was lost.

While in these four cases the injuring force had directly opened the floor of the orbit and the eyeball was secondarily wedged into the gap by dislocation of the soft parts, in Kalt's case the lower inner orbital wall was fractured by the eyeball itself, which was then held fast in the resulting opening.

The case was that of a worker in a quarry, the right half of whose face, especially around the right orbit, had been mashed in by rock. A few weeks later when the swelling had gone down the right eyeball was found dislocated downwards almost its own height and covered by the intact lower orbital margin and the intact lower lid. When patient pulled the lower lid down with a finger, he could read with the dislocated eyeball, which was, however, altogether immoveable.

In our case the eyeball with the cornea downward was found in the antrum maxillare. The conjunctiva was torn off at the limbus and the muscles directly at their insertion. The opening in the wall of the antrum was so small that the eyeball could be removed only with the greatest difficulty. In my opinion this can be explained only by the breaking of the thin orbital wall at this place by the eyeball with the cornea ahead and its then being pushed through the narrow opening; in this way the soft parts on the sclerotic were stripped off by the sharp edge of the

roof of the maxillary antrum. It is easily undertood that some fibres of the inferior oblique remained intact, since in consequence of the origin of this muscle from the inner lower wall of the orbit it was dragged on the least.

If we would want to assume that the horn made the hole first and, perhaps, had dragged the eyeball into it by the soft parts, the smooth way in which the soft parts were torn off from the whole periphery of the eyeball could not easily be comprehended. Moreover, the opening in the orbital wall would probably have been larger, since the eyeball would have had to pass by the side of the horn. That at the infraction of the floor of the orbit the eyeball did not burst is probably due to the lids, fasciæ, muscles and fat protecting the eyeball like a cushion against the direct stroke of the horn.

The atrophy of the optic nerve is explained by the strong pull. The hæmorrhages in the depth of the eye, the choroidal rupture, the opacity of the cornea and the pigment deposits on the anterior lens capsule were due to the strong compression.

Aside from the rare form of injury itself our case is also of interest on account of the healing on of the eyeball. As seen from the history, the eyeball was fastened with deep conjunctival sutures in its proper position. Although it was doubtful whether the eyeball could be preserved on account of the extensive injury to the adnexa, yet we made the trial. The eyeball healed on remarkably well. Even, the lesions produced by the trauma, as far as no total destruction had resulted, retrograded. In spite of the extensive severing of tendons the motility of the eyeball, though limited, returned. Enophthalmus remained, however, permanent. The originally opaque cornea became clear, its sensibility returned to the norm. The intraocular hæmorrhages were absorbed. After a few months the background of the eye could be studied in all its details. The retinal hæmorrhages and the exudation disappeared with time, only the total atrophy of the optic nerve and the scar of the choroidal rupture in the macular region remained behind. The intraocular tension was normal during the months of observation. Of course, vision remained lost since the nerve had suffered too much from the dragging.

Why was this eyeball saved? For the re-establishment of the normal tension and of the form of the eyeball the nutrition had to take place in about the normal manner. Since we know that the ciliary bloodvessels play the foremost role in the nutrition

of the eye, we must assume that they had remained intact. Of course, this can refer only to posterior ciliary vessels, since the anterior ones had all been severed with the tearing off of the recti tendons. The absorption of the blood from the interior also speaks for this. Furthermore, we know from Wagenmann's experiments that in the animal the cutting through of the posterior ciliary bloodvessels caused pigment accumulations in the choroid. Observations by Studer showed that in man pigment degeneration after cutting the ciliary arteries appears only plainly when the circulation in a part of the anterior ciliary arteries is, also, abolished. Since in our case all anterior ciliary arteries had been torn off and on the other hand no pigment invasion into the retina or choroid was found, we must assume that the circulation in the posterior ciliary arteries was not destroyed, unless we want to assume that by the formation of anastomoses or in some other way the interrupted circulation could have been quickly repaired.

Among the hitherto published cases a reposition of the eyeball has been made in only one, that of Langenbeck. There the eyeball could be reduced into the orbit after the fracture had been pried apart by an elevatorium. The eyeball was not injured, vision perfectly preserved, yet two months later the eye was lost in consequence of a corneal ulcer. In the other cases except the one of Smetius, in which the dislocation of the eyeball was only recognized a year later, the eyes which were blind or nearly so had to be removed.

In view of the good result of the reposition in our case it seems advisable in cases of dislocation of the eyeball not to remove it at once, but to make the attempt to heal it on again. In cases in which only few connections between orbit and eyeball are severed this is indicated without saying, but even when these connections are most widely torn, as in our case, the reposition should at first be made.

The chances for this are, of course, scarce as far as the dislocation is concerned, but we might add to these the cases of avulsio bulbi in which the tearing of the eyeball from its adnexa is, also, observed and which in reality are more frequent than the cases of dislocation of the eyeball.

According to Birsch-Hirschfeld these cases of avulsio may be divided into three groups. (1) During instrumental confinement the eyeball may intra partum be torn out; (2) avulsio as the result of self-inflicted injury among the insane; (3) the third

group comprises cases in which the injury is due to a different mechanism.

In the cases of the first group a reposition is probably impossible since the prognosis quoad vitam in these cases is very bad on account of the accompanying fractures of the skull. It is different with the other two groups. In 1909 Birsch-Hirschfeld collected seven cases of self-inflicted avulsio among the insane. In the last few years three more cases were published by Chevallerau and Liègard, Williams, and Lundsgaard. In none of these cases was reposition tried, although, as in Dehn's case, the tearing of the tissues was no greater than in our case.

In luxatio bulbi which, according to Birsch-Hirschfeld and Rotenspieler is, only a lower degree of avulsio, reposition has several times been made. In such cases, too, the adnexa of the eyeball may be badly torn. Cases in which the luxatio occurred without tearing of the soft parts I do not want to discuss. But in one case of Chalupecky, all of the recti muscles were torn off; reposition succeeded, yet the eye was lost during the next few days through panophthalmitis. In another case, of Àxenfeld's, the luxated right eye was reposed; Tenon's space was opened and the external rectus was torn off. A short time after a corneal ulcer appeared and was followed by phthisis bulbi. In a case of luxatio which was reported by Flarer and in which with an intact optic nerve all muscles except the rectus externus and the obliquus superior were torn off, reposition succeeded. This eyeball, too, became atrophic, but remained mobile.

Rampoldi's case is, as regards therapeutic considerations, most similar to ours. This author succeeded in reattaching an eyeball which had been completely enucleated by a horn and which was connected with the orbit only by the rectus externus. On account of severe hæmorrhage the eyeball which was torn from the optic nerve, also, could be retained within the orbit only by stitching the lids together. The eye regained motility, except nasalward. Conjunctiva and cornea again became sensitive, after a corneal ulcer had healed and formed a small leukoma in the lower half of the cornea. Atropin and eserin acted well on the pupil. Vision was abolished. In this case, then, the eyeball became reattached, although it was united to the orbit by one muscle only, the externus. It seems that this anterior ciliary artery was alone capable of preserving the eyeball; the others were torn off with the muscles.

When we thus see that in these two cases, ours and Ram-

poldi's a cure was obtained, we cannot help but be astonished, that in a series of cases in which the injury and separations of continuity were much less, a healing on of the eyeball was not obtained. Thus, cases have been described in which after a simple luxation without even a tearing of muscles or of the optic nerve and in spite of immediate reposition and blepharorhaphy the eye was lost. (H. Roemer.) Why this should be so, we cannot tell. Perhaps, the injury to the ciliary bloodvessels is the cause. Perhaps, the systemic condition is of importance. Roemer's case was in a sickly woman, in Rampoldi's and our case the patients were strong and healthy.

Thus the reporting of our case may, aside from its casuistic interest, also be of some practical value. It shows that even with extensive tears in the adnexa the experiment is indicated to repose the eyeball and to fix it in its proper position, since a successful healing is possible. Whether this will be obtained when the eyeball has been perfectly torn out and there is no longer any connection with the orbit left, as in the cases of self-inflicted injuries in the insane, we cannot tell, since no such experiment has hitherto been published. The experiment can of course, succeed only if the eyeball is perfectly intact and no perforating injury has occurred. In proper cases, when vision is still retained the transplantation of bone and cartilage, according to Perthes, can be resorted to in order to obviate not only the disfiguration, but also the disagreeable double images.

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ON SECONDARY GLAUCOMA.*

By Dr. Ch. Abadie.

At different previous occasions I have drawn the attention of ophthalmologists to the question of the glaucomatous states and secondary glaucomata which differ distinctly from the common ordinary glaucoma.†

If I return to this subject, it is because I have lately recognized the importance of this question more and more. Such secondary glaucomata are much more frequent than is usually supposed. They are very frequently not recognized and the unfortunate patients wander perfectly blind from clinic to clinic when an exact diagnosis and a well directed therapy could have prevented their blindness.

The diagnosis of secondary glaucoma is sometimes easy, in other cases quite difficult. It is easy when the glaucomatous process is preceded or accompanied by symptoms of inflammation in the anterior third of the eyeball, iritic exudates, pericorneal injections, disturbances of the clear media, etc.

It becomes very difficult, when these symptoms are wanting or have been present only in the embryonic state, or finally have passed unnoticed. Then a very careful examination is necessary in order to detect that we deal not with an ordinary glaucoma, but with a glaucoma provoked by a concomitant pathological condition of the affected eye. In these doubtful cases we must never fail to examine the most peripheric parts of the retina, especially the lower ones. Often we will find either numerous foci or one isolated, sharply defined, one which by itself however is sufficient to establish a diagnosis of chorioretinitis. At other times the exploration of the fundus of the eye may be perfectly negative and yet the diagnosis of secondary glaucoma must not be given up.

Some chorioretinitic processes may exist which develop without giving birth to foci, which can be seen with the ophthalmoscope. There are simple local diffuse infiltrations which it is difficult to differentiate from the normal condition. Further, we must never neglect to make a very careful examination of the pupillary margin, where traces of exudation, if ever so minute but always very

*La Clinique Ophtalmologique, February, 1916, p. 75.

†On the glaucomatous states (Des états glaucomateux). Arch. d'opht., July, 1909.

significant, will indicate that another morbid process than the glaucoma itself had already stricken the anterior segment of the eye.

Whether it is easy or difficult, it is of importance to establish firmly the diagnosis of secondary glaucoma, for all therapy, and in consequence the future of the patient depends on it.

We must above all be convinced that while in true glaucoma surgical interference, an iridectomy, is everything; this is not so in secondary glaucoma in which this operation, so to speak, takes second place.

Why? Because when practiced alone without general treatment against the morbid state producing this secondary glaucoma, it is insufficient and does not save the patient from the blindness which threatens him.

On the contrary, if the pathogenic cause of the secondary glaucoma is found in time and if an appropriate treatment is at once instituted, the iridectomy may become useless and the hypertension be reduced to a normal tension without any surgical interference.

What are these pathological states of the eye which most frequently provoke secondary glaucoma?

By far in most cases iridochorioiditis or chorioretinitis with their different modifications irrespective of whether they are of a specific nature, bacterial, rheumatic or of an as yet unknown and undetermined nature.

The general treatment must, therefore, first be appropriate to the specific ætiology of the affection. In the great majority of the cases, mercury in form of intramuscular, or better, if possible intravenous injections should be employed. It should be well known that, moreover, even after an iridectomy, if it has become unavoidable, this medical treatment should be continued for a long time.

The patient must remain under strict observation and at the slightest appearance of a relapse and an elevation of tension the former treatment must be resumed.

If there is a microbic infection iodogenol in large continued doses and tuberculin injections must be given.

The relapses in many cases of glaucoma which had been considered and operated on as ordinary cases of glaucoma when in reality they were cases of secondary glaucoma, are due to the fact that no general treatment was instituted after the operation. Another operation of whatever nature does cure them, either if

ignoring their true origin no appropriate general treatment is instituted.

The most obvious proof of all that I have said on this subject is furnished by an attentive study of congenital hydrophthalmus or infantile glaucoma, which is always a secondary glaucoma. The clinical aspect is changed because evolving in an eye whose sclerotic is stretchable the eyeball grows monstrously and becomes buphthalmic.

Such a glaucoma being always secondary all surgical interferences practiced alone bring forth disaster in most cases. In spite of what I have previously written on this point, experienced practitioners still discuss at length (without paying any attention to the general treatment) the best method of surgical procedure. And these discussions are always the same tedious and interminable ones on iridectomy, sclerotomy, trephining, etc.

Since my first papers on this subject I have not operated on a single case of infantile glaucoma, and I have cured all of them, or ended their development by a prolonged mercurial treatment. The full efficacity of this treatment does not make itself felt until after a long time, it has often been abandoned at the very moment when it was beginning to act.

I use with preference mercurial injections, especially intravenous ones, but in very small infants a short time after their birth, and that is the very moment when something must be done, mercurial inunctions are sufficient and are ordinarily borne admirably well, for several years even, as it is necessary.

MEDICAL SOCIETIES.

REPORT OF THE FIFTY-SECOND ANNUAL MEETING OF THE AMERICAN OPHTHALMOLOGICAL SOCIETY.

Held at Washington, D. C., on May 9 and 10, 1916.

Dr. G. E. deSchweinitz in the chair.

Reported by Miss Lulu Gay, Philadelphia, Pa.

(Concluded from June number.)

Tuberculosis of the Retinal Vessels.

Dr. Edw. Jackson, Denver. Tuberculosis starts as a local disease. Its general symptoms appear at an advanced stage, with extensive invasion. The point of primary attack is often reached through the general circulation. It tends to involve the vessel walls, provoking only moderate reaction and causing hæmorrhage. Recovery occurs through the development of fibrous tissue, limiting the lesion, and finally obliterating it. When it affects the retinal vessels, they become enlarged, are surrounded with exudate, and give way, causing extensive intraocular hæmorrhage, followed by the formation of new vessels and the organization of connective tissue masses; presenting early the picture of retinal and vitreus hæmorrhage, and later that of proliferating retinitis.

DISCUSSION.

Dr. Verhoeff: During the past few years there have been published at least one microscopic examination of one type and one of another type of retinal hæmorrhage due to tuberculosis. Stock has made an examination of miliary tuberculosis, and finds that there may be retinal hæmorrhage in these cases with no evidence of tuberculosis in the retina. Evidently the bacilli have lodged there and caused the hæmorrhage before any tubercle has been found. The more interesting cases are those which occur in the chronic type of ocular tuberculosis, which is ordinarily not fatal. The patients are in fairly good health, and if they did not have any eye trouble, one would not suspect that they had any tubercular condition. The view that I have advanced as to the origin of chronic ocular tuberculosis in general is that it is due to the

invasion of bacilli into the aqueous humor, and they may lodge in different places. I examined one case of marked tuberculosis of the ciliary body and I found tuberculosis in the retina such as Fleischer has described. I think it is still debatable as to whether Fleischer is right in claiming that the tuberculosis is produced in this way, but it would simplify the whole thing if we could show that all forms of chronic tuberculosis occurred in the same way.

Dr. Fisher: The case I have is that of a young man who began having hæmorrhages at the age of nineteen. I saw him when he was twenty-three years of age. The Wassermann was negative, and every possible means of general diagnosis that we know of was tried, and everything was negative except the tuberculin reaction. This was always positive. That would look like a case of tuberculosis pretty definitely, but the interesting thing was that the patient did not get better under tuberculin therapy. He was then given salvarsan, and that resulted in the permanent loss of vision in the left eye, for some reason which I do not know. About a year later, I saw him, and he had cloudy opacity of the vitreous body in the right eye. In the course of examination, we found a flow of pus coming from a molar tooth; and in connection with this it was interesting to note that when the patient did not keep it clean by sucking, etc., the vision would go down. In order to see what could happen I asked him to leave the tooth alone for twenty-four hours, when his vision sank to shadows. We concluded that it was quite probable that the focus of infection was the abscess, instead of tuberculosis. We had the tooth extracted, and after that he had the longest period of freedom from hæmorrhage that he had ever had. Dr. Rosenow made cultures from this pus, and we injected it into eight rabbits; five developed little patches of exudates beneath the retina and in the choroid. We have not been able to determine the character of the lesions, partly on account of faulty technique. The interesting points in the case to me are the marked improvement which occurred on getting rid of the infection and the absolutely bad course which the disease pursued under the tuberculin therapy.

Dr. Knapp: We have had a case this year very much like that which Dr. Fischer reported inasmuch as the patient had an apparently proliferating retinitis with a very distinct apical abscess, and we thought, of course, that this case would very promptly get well after extraction of the tooth. This was done and the case

went on, however; and the tuberculin tests then made showed the case to be distinctly a tubercular one. The ætiology is still further borne out by the fact that the patient has since developed hæmorrhages in the other eye. The experience I have had is that the papilloretinitis cases are of a different type, belonging in the papillitis type and not in the terminal retinitis type. The feature of interest in these cases is the relative benignity and prompt improvement, and often cure, under tuberculin therapy.

Dr. Jackson: With reference to the pathology of these cases, I think there has been at least one paper describing peripheral retinal choroiditis; but in those cases I figured that the majority of the lesions looked most like tubercular lesions, and were connected with the arteries—very distinctly, the larger arteries. It is quite possible that they arise by the migration of the bacilli from small lesions interiorly; and the appearance of the vitreus haze, apparently isolated from any retinal lesion, would point in that direction. But some of the lesions certainly are in close relation with the arteries.

A Clinical and Pathological Study of Two Cases of Tuberculosis of the Choroid.

Drs. Robert L. Randolph and Harry C. Schmeisser, Baltimore: We present two cases of tuberculosis of the choroid, one of which was in a negro infant, which showed characteristic changes in the choroid on admission to the hospital. The changes were verified by autopsy and microscopic examination. In the case of the other, a white child, the usual changes did not show themselvess for several days after entrance, and after repeated examinations; thus showing the importance of repeated examinations in this class of cases. The gross and microscopic findings in the fundi of the two infants were, in one case general miliary tuberculosis with tuberculous meningitis, and in the other, miliary tuberculosis without tuberculous meningitis.

DISCUSSION.

Dr. Risley: I do not know of anything in my experience that has caused me more surprise than the frequency with which I find tuberculosis as the involving factor, since I have been looking for it. Cases of disseminate choroiditis, if we will make the necessary study, will be found to be tubercular in character. Where other treatments before failed me entirely, I now find that gradually ascending doses of tuberculin by hypodermic in-

jection has proved the only efficient method of treating these cases, thereby showing the correctness of the diagnosis. Albuminuric retinitis and choroidal affections occur in connection with kidney affections; but I do not believe it to be necessarily so.

Dr. Randolph: Those cases of undoubted choroidal tuberculosis and miliary tuberculosis in the choroid differ entirely from anything we see in so-called disseminated choroiditis. The tubercules are distinctly round and distinctly elevated above the plane of the retina, and there is no suggestion of any pigment about them, a thing which always occurs in choroiditis disseminata.

Reports of Cases of Quinine Amblyopia with Remarks.

Dr. John E. Weeks, New York: I have observed a number of cases of quinine amblyopia, examining the patients and noting the appearance of the retina twelve hours after the administration of the quinine, and at short intervals thereafter. In some instances the quinine amblyopia came on after three months, and in one case, not until thirty years after.

DISCUSSION.

Dr. Bruns: I have seen many cases of quinine poisoning, owing to the fact that I live in a region where malaria exists in a severe form all over the city and surrounding country. There seems to be a great individual difference in the susceptibility to the drug. We frequently see patients who have taken large doses, given for 3 days in succession, without having suffered any ill-effects. On the other hand, we see those that are afflicted with blindness from comparatively small doses. One case was that of a man who was treated with quinine in about 1867, and he had been made "blind" by it. I saw him perhaps 25 years afterwards. No ophthalmoscopist who lives would have failed to recognize the state of extreme nerve atrophy. The disc and the white vessels were very small, but the central vision with correction was certainly better than 20/30 in each eye. How, with the destruction of so much tissue, the central vision was as good as it was, is difficult to conceive.

Dr. Ellett: I have seen some of these cases; and from my experience, I get the same impression of idiosyncrasy, and also as to the preservation of the central vision. The dose in the cases varied from eight grains to one ounce. The blindness came on suddenly. It persisted from one week to three months, and all

of the cases ultimately showed the ophthalmoscopic appearances of optic atrophy with great contraction of the vessels. I am under the impression that these cases get well as readily without treatment as with any treatment we know of.

Dr. Fisher: In view of the marked decrease in the size of the retinal arteries, it struck me that amyl nitrite might be valuable in the treatment.

Dr. deSchweinitz: The smallest dose of quinine that I have ever seen produce amblyopia was twelve grains in twenty-four hours. In some early experimental work, a significant feature was brought out; it was the theory that it is owing to the vascular changes that blindness occurs.

Dr. Weeks: I am of the opinion, from observations of the cases of poison by accident, that it is rather the rule for the vision to decrease after the first discovery. In the treatment we used glandulin because of its more continuous effect on the size of the bloodvesseds. Amyl nitrite is more transient in effect apparently although I think it would be perfectly permissible, and probably a good thing. to employ it.

A Case of Pituitary Body Disease with Reference to the Effects of Early Operation.

Dr. Wm. Evans Bruner, Cleveland, Ohio: It is of great importance that tumor of the pituitary body should be recognized and operated upon early. In this case that I am reporting, when the diagnosis was first made, in April, 1914, the patient had a vision of 6/5 in each eye with a small scotoma for red to the temporal side of the fixation point in each eye. In October, V= O.D., 6/6; O.S., 6/12. There was a small absolute scotoma to the temporal side of fixation in each eye, and slight difficulty in reading. In December, some characteristic bitemporal form defects were found, with very small discs. In February, 1915, he was operated on by Dr. Cushing. In April, 1915, vision was 6/5 in each eye; and there was no scotoma except for color, and no further difficulty in reading. In October, 1915, improvement was still maintained.

DISCUSSION.

Dr. deSchweinitz: I am firmly convinced that preceding the ocular change in many types of pituitary body diseases (so-called bi-temporal scotoma for example), there is a period of time, when there exists what is sometimes known as pituitary body

amblyopia, a form of blurred vision, of which the patient is not conscious. I am not so pessimistic as to the value of pituitary body treatment as Dr. Bruner seems to be; for I have seen two extraordinary and satisfactory cures after pituitary body feeding. One case in which the patient developed hemianopsia, with a gradual return to normal fields, and a remaining small scotoma on one side following pituitary body feeding with no operative procedure whatever. The patient was given 1½ grains of thyroid extract three times a day. The vision improved from 4/150 to 6/5 in one eye, and 6/12 in the other eye, and the patient is pursuing his active work.

ABSTRACTS FROM MEDICAL LITERATURE.

By W. F. Hardy, M.D.,
St. Louis, Mo.

THE TOXIC EFFECTS OF ETHYLHYDROCUPREIN ON THE EYE.

In recent years the local use of optochin in the eye has been much extolled, especially in combating serpiginous ulcer of the cornea. No startling results have come from its use. It was given to us with the warning that it was toxic and should be used guardedly. Oliver (*British Med. Journal*, April 22, 1916) gives us some light on the drug from a different angle. He mentions the fact incidentally that cases have been reported in which the instillation of a 1 per cent. solution of the drug had caused rapid destruction of the cornea. Oliver's own case report deals with the effect on the eyes from the internal administration of the drug. Fränkel had used ethylhydrocuprein internally in a number of cases of pneumonia, during an epidemic of that disease in Berlin. He met with amblyopia as a resulting phænomenon, which as a rule passed off in two days. Oliver's patient received rather large doses (5 grains at a dose every 3 hours until a total of 120 grains was taken). Roaring in the head, partial deafness and amblyopia resulted. Vision was reduced so that light could not be distinguished from dark. Pupils were dilated, vessels reduced to fine threads, and both discs quite white. Vision gradually improved up to 6/18 and then receded later to 6/60, both

discs perfectly white and fields much contracted. The patient was in such a condition as to be unable to earn his living. Oliver thinks ethylhydrocuprein is a dangerous drug and its internal administration should be avoided. Much smaller doses may suffice to kill the pneumococcus. The experiments of Moore show that the drug inhibits the growth of and kills pneumococci in vitro in very considerable dilution. The serum of rabbits which have been previously treated with a single dose of ethylhydrocuprein exerts a bactericidal action on and later inhibits the growth of pneumococci in the test tube.

THE PROGNOSIS IN SYMPATHETIC OPHTHALMIA.

Percy Dunn (*The Lancet*, March 18, 1916) contends that the effete terminology, sympathetic ophthalmia, should be discarded. He is convinced that so-called sympathetic ophthalmia is actually and in reality due to a micro-organism, as yet undiscovered, and that properly the disease should be called an infective cyclitis or ophthalmitis. Dunn states that the disease is now a different disease, at least in degree, from that upon which its literature has been mostly based. He advances as reasons in proof of this contention that firstly sympathetic ophthalmia is becoming very rare with time; its increasing rarity has corresponded with the practice of aseptic and antiseptic principles in wound treatment. Secondly, its virulence for the same reason is greatly modified and owing to this the disease has become curable.

Dunn does not believe in a division between sympathetic ophthalmia and sympathetic irritation. He, along with most ophthalmologists, look upon these affections as representing but a difference of degree. He lays emphasis on one point which needs emphasizing, and to which attention has not been often enough directed, viz.: that an inflammation occurring in an injured eye or its fellow need not necessarily be a sympathetic inflammation. Even where an eye has had sympathetic inflammation so-called, subsequent relapses may be the result of entirely different causes and in no way related to or dependent upon the original infective inflammation, except in so far as every uveal inflammation from whatever cause renders an eye subject and prone to subsequent inflammations. The exciting cause may be unrelated to the original one. For instance, the author points out as an argument that, for example, relapses could scarcely fail to occur in eyes damaged by sympathetic ophthalmitis, when the patient was suffering from the effects of alveolar pyorrhœa. The whole paper is a plea for the

abandonment of too pessimistic prognostications to those who have suffered an injury to an eye, and subsequently undergo a uveal inflammation. (It is quite conceiveable that the owner of an injured eye might suffer an iridocyclitis in the injured or fellow eye at a subsequent date not remote, the ætiological factor of which could be lues, gonorrhœa, pyorrhœa, or other cause. In such a case without a careful history an ophthalmologist might easily be influenced in favor of a diagnosis of sympathetic ophthalmia. Only a histological examination showing the changes described by Fuchs and designated by him as characteristic of sympathetic ophthalmia, would be conclusive.)

OPERATIVE TECHNIQUE OF LATE TRAUMATIC CATARACT.

Carpenter (*Southern Med. Journal*, April, 1916) directs attention to an operative technique which in his experience has given better results in traumatic cataract than any other technique. In the majority of cases where light perception is good and inflammatory reaction has subsided, the lens substance consists of a soft opaque unorganized material, or of a more or less thickened whitish membrane, which may be removed with some degree of certainty. Serious loss of vitreus, gaping of the corneal wound with long delayed healing or secondary infection are complications which may accompany operative interference. To obviate these Carpenter opened the anterior chamber in a series of cases by making the corneal incision immediately behind a conjunctival flap. This flap was sutured in place as a final step in the operation. The flap is made as in the Elliot glaucoma operation. The corneal incision is made with a narrow double-edged knife and comprises from one-fourth to one-third of the corneal circumference. Iris adhesions if present are severed. A cystotome is used for opening the capsule. The soft lens substance is removed in all cases by irrigation, using for this purpose a dental syringe to which is attached a fine canula bent at a right angle. Occasionally it was necessary to curette a portion of the lens. While irrigating, the edges of the wound are slightly distended with forceps to facilitiate the egress of the lens matter. The usual toilet is made except as regards the conjunctival flap. A slight loss of vitreus was unavoidable in a few cases. The incisions healed nicely and rapidly in all cases. No infection occurred in the 20 cases and little pain was experienced. Useful vision was restored in seventeen cases. With

one exception the patients were all adults. Eighty per cent. of the operations were performed at a period varying from six weeks to six months after the primary injury. The technique because of the character of the corneal incision is not suitable for lens extraction by expression and was therefore not attempted in any eye at the time of injury. Carpenter claims a better conjunctival flap by this technique than when the flap is made along with the counter puncture of the cornea. Sudden escape of intraocular fluid under increased tension is not likely to occur, while at the same time it is usually possible to make a satisfactory iridectomy for such cases. The most important feature of the technique is the advantage gained by the conjunctival flap in immediately sealing up and protecting what is otherwise a dangerous wound in a pathological eye.

THE RETINAL DETACHMENTS OF RENAL RETINITIS.

R. Foster Moore (*Royal London Ophth. Hospital Reports*, Vol. XX, Part II, March, 1916) contributes a lengthy article on this subject, illustrated with a number of plates and the text elucidated by a number of case histories bearing on the subject matter. A considerable bibliography is appended. He states that there is a tendency to consider retinal detachment as a rare complication of renal retinitis. The author points out that the incidence of this complication is by no means rare. The types are described as flat and globular; the former being chiefly produced by solid subretinal exudate and the latter chiefly by fluid. Detachments are present only in the presence of retinitis. The retinitis found in a majority of the cases is severe in degree with much exudation into the tissues of the retina. The liability to detachment increases with the severity of the retinal changes and is independent of the type of nephritis producing them. Those conditions in which retinal changes tend to be severe, predispose to retinal detachments, such are pregnancy and youth or adolescence, rather than old age. It has been pointed out that the subretinal fluid is sero-albuminous in nature. The following characters of the detachments are in conformity with this observation: (a) They usually involve the lower part of the retina as a result of the effects of gravity. (b) They are often globular and transparent in appearance. (c) And they disappear rapidly and completely owing to the absorption of this fluid. The author thinks that the whole of the subretinal exudate, whether solid

or fluid, is derived from the retina and that there are circumstances which militate against the view that the choroid is the source of the subretinal fluid. It is definitely asserted that the detachment is related to the retinitis and not to the œdema, for a general œdema alone does not produce detachments and they may occur in the entire absence of œdema. Vomiting and retching, frequent symptoms in nephritis, are held to have no connection with detachments. Where recovery from the nephritis occurs, reattachment of the retina is a frequent occurrence. The presence of a retinal tear implies presence of vitreus in the subretinal space and precludes the possibility of reattachment. Conversely the absence of a retinal tear implies that the subretinal material is not vitreus and that absorption and reattachment are possible. Many of these cases when examined ophthalmoscopically afterwards, afford no clue to the previous existence of a retinal detachment, although evidence of a past retinitis may be clear. The separation of the retina from its pigment epithelium does not determine the destruction of the retinal functions. Vision may with reattachment be recovered. The impairment of vision in the cases which recover is dependent upon the retinitis rather than upon the retinal detachment unless this involves the macula. It has been suggested that the intraocular pressure should be increased owing to the addition of the subretinal fluid to the contents of the eyeball. Moore found that in no case did the intraocular pressure exceed the normal limits. The following conclusions were reached:

(1) Detachment of the retina is by no means an uncommon complication of renal retinitis, and is especially frequent in the retinitis associated with pregnancy. (2) In 40 out of 44 cases the detachments were bilateral. (3) Nephritis in the absence of retinitis is not a cause of detachment. (4) The liability to detachment is largely proportional to the severity of the retinal changes. (5) The occurrence of detachment is not related to the presence or absence of general œdema. (6) The immediate cause of a detachment is an active subretinal exudation. (7) This exudate is probably derived entirely from the retina. (8) The clinical appearances of the detachments differ according as this exudate is chiefly solid or chiefly fluid in nature; in the former a flat detachment results, and in the latter a globular one. (9) If the patient recovers, reattachment of the retina occurs and this may be dependent upon the absence of gross tears of the retina. (10) After recovery permanent visual defects and fundus changes probably always remain. (11) the prognosis as to life is not modified by the existence of a retinal detachment,

except in so far as it usually only occurs in the presence of severe retinal changes. (12) The intraocular pressure remains within normal limits in the presence of these detachments.

THE EYE FINDINGS IN ONE HUNDRED PATIENTS WITH PULMONARY TUBERCULOSIS.

Bedell (*New York State Jour. of Med.*, April, 1916) sought to determine for himself the rôle of eye strain and the incidence of ocular trouble in tuberculosis. Considerable has been written concerning eye strain as an ætiological factor in pulmonary tuberculosis. The observations were made on incipient, moderately advanced and far advanced cases. The following points were noted: The color of the iris, the size and reactions of the pupil, the status of the extraocular muscles, the conjunctival and corneal details recorded and the vision tested for distance and near. The pupillary reactions were tested in daylight under an equal light stimulus. A 5 per cent. solution of euphthalmin was used in each eye, and the ophthalmoscope and retinoscope used. Some patients were too ill for a routine examination. The ages of the patients varied from 14 to 69 years. The results showed: Hypermetropic eyes 54, myopic 3, myopic astigmatism 12, mixed astigmatism 7, hypermetropic astigmatism 26, compound hypermetropic astigmatism 39, emmetropic 4. The pupils were equal in 69 and unequal in 31. Bedell is convinced that this has no practical value as 100 patients presenting in his office for refractive errors showed 27 per cent. of unequal pupils. The author refrains from drawing any conclusions the result of his observations. He advises concerted action and the examination of a large number of patients in sanitaria, both before and after proper refractive correction before coming to any conclusion regarding the rôle of eye strain in the ætiology of tuberculosis. A complete table giving details of the cases accompanies the article, as does also a rather complete bibliography.

THE STANDARD OF VISION IN THE ARMY.

The following editorial is taken from the *British Medical Journal of* May 13, 1916:

"There has been considerable uncertainty as to the exact standard of vision demanded by the War Office for soldiers. This uncertainty has led to many men being rejected who are suitable for some form of service, and to many being passed into the army with visual defects which render them useless on active

service. Men who have seen service in the trenches have, after their return home, been found to have such poor vision that they were not only valueless as fighting men, but actually a source of danger to their comrades. As examples we may cite cases of advanced congenital familial night blindness, congenital nystagmus, myopia of over 10 diopters, and hypermetropia of 8 diopters. On the other hand, we know of the case of a man who had 6/3 vision in his right eye but a blind left eye who was rejected repeatedly for the R. A. M. C., although in civil life he was an efficient high railway official; and of a medical man who was recently rejected because he had slight myopia perfectly corrected by glasses. Every ophthalmic surgeon is aware of the facts. The visual standards seem apt to vary with the examiner. Probably little attention is given to the very important question of the illumination of the types. Poor lighting may reduce the acuity very considerably, and a candidate with say 6/18 vision might easily be rejected by an examiner who had no adequate arrangements for illuminating his types. In the presence of such confusion it may be useful to summarize the regulations in force at the present time. They are as follows: (a) If a recruit has an acuity of 6/24 or better, with each eye without glasses, he is to be considered 'fit'; (b) if his acuity is 6/24 with the right eye, and not less than 6/60 with the left eye without glasses, he is 'fit'; (c) if he can see 6/24 with the left eye and not less than 6/60 with the right eye, he is 'fit' for the A. S. C., the A. A. M. C., the A. O. C., and drivers of the R. A. and R. E. These regulations apply to general service in the field. A later regulation says that: A man is fit for garrison service at home or abroad if he can see well enough to shoot with the aid of glasses. This regulation is ambiguous, for it does not state the acuity necessary for shooting. We presume, however, that if 6/24 is enough for active service without glasses, 6/24 with glasses will be sufficient for garrison duty. We would, however, again impress upon those who examine recruits, that it be absolutely essential that the test types be well illuminated and placed at six metres (20 ft.) from the candidate. If the room be too small, a set of types graduated for five metres should be employed."

We in America should profit by the lessons, mistakes and experiences of our European confreres, and instead of indulging in useless parades and vocal gymnastics in the name of preparedness, get down to facts and work out the multitude of details in every line of endeavor, before we need them and not after the need arises.